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(57) 【要約】 (57)[SUMMARY]

【構成】  
有孔フィルムと無孔フィルムとを剥離可能に貼り合せてなり、前記無孔フィルム側に抗菌剤を含有させたことを特徴とする抗菌積層フィルム

[SUMMARY OF THE INVENTION]

It forms peelably to stick a perforated film and a non-porous film.

The antimicrobial was made to contain in an above mentioning non-porous film side.  
The antibacterial laminated film characterized by the above-mentioned

【効果】  
含水率の高い食品を包装した場合に、食品の腐敗を防ぐことができ、しかも固体分と液体分とが混在した食品を包装する場合には必要に応じて無孔フィルムを有孔フィルムから剥離して、液体分のみを排出できるもので

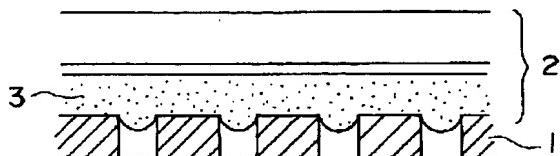
[EFFECTS]

The decay of foodstuffs can be prevented when the high foodstuffs of a moisture content are packaged.

And in packaging the foodstuffs with which the solid content and the liquid content were intermingled, it peels an non-porous film from a perforated film depending on necessity.

Only a part for a liquid can be ejected.

ある。



**【特許請求の範囲】**

**[CLAIMS]**

**【請求項 1】**

有孔フィルムと無孔フィルムとを剥離可能に貼り合わせてなり、前記無孔フィルム側に抗菌剤を含有させたことを特徴とする抗菌積層フィルム。

**[CLAIM 1]**

A antibacterial lamination film, which forms peelably to bond a perforated film and a non-porous film.

The antimicrobial was made to contain in an above mentioning non-porous film side.

**【発明の詳細な説明】**

**[DETAILED DESCRIPTION OF INVENTION]**

**【0001】**

**[0001]**

**【産業上の利用分野】**

本発明は食品の包装材料等として使用することができ、食品の腐敗を防止することのできる抗菌積層フィルムに関する。

**[INDUSTRIAL APPLICATION]**

This invention can be used as a packaging material of foodstuffs etc.

It is related with the antibacterial lamination film which can prevent the decay of foodstuffs.

**【0002】**

**[0002]**

**【従来の技術】**

ところ天、野菜の水煮、くらげ、もずく、豆腐、こんにゃく等の含水率の高い食品は、水分によって細菌が繁殖し易い環境にあり、日持ちする物が少なく、要冷蔵で賞味期限が1週間以内のものが多い。このため、最近、

**[PRIOR ART]**

The high foodstuffs of moisture contents, such as boiling in water of a Tokoroten (agar jelly) and a vegetable, a jellyfish, a mozuku seaweed, bean curd, and a konjak mannan, are in the environment where bacteria tend to breed with water content.

Thing nonperishable is few. Many of the things have use-by dates within 1 week at

容器又は、袋体等の包装材料を形成する積層フィルムの最内層に抗菌剤を練り込み、菌の繁殖をおさえている。

refrigeration.

Therefore, recently, an antimicrobial is kneaded to the innermost layer of the lamination film which forms packaging materials, such as a container or a bag, and the propagation of a microbe is pressed down.

### [0003]

また、これらの食品は固形分と液体分とを混在させて充填密封した食品包装体とする場合も多く、これらの食品を使用に供する場合は、固形分と液体分とを分離する必要があるので、食品包装体の一部を切断したり、竹串等で孔を開けたりして液体分のみ排出するようにしたり、開封した後で、ざる等にいったん移して液体分を分離するものであつた。

### [0003]

Make these foodstuffs moreover, often be the foodstuffs packaged objects which the amount of solid content and liquid was made to be intermingled, and carried out filling sealing. Since a part for a solid content and a liquid needs to be separated when providing use with these foodstuffs, a part of foodstuffs packaged object is cut.

Moreover, a hole is opened by the bamboo spit etc. It is made to eject by the liquid.

Moreover, after opening, it once moves to a colander etc. It was that which separates a part for a liquid.

### [0004]

### [0004]

#### 【発明が解決しようとする課題】

しかしながら、上記食品はほぼ満注で包装されるが、少しでも空気が入ると、酸性食品でもかびが生えたりする等の課題が残されていた。また、上記従来の積層フィルムでは、上記固形分と液体分とを混在させて充填密封した食品包装体において、共に包装されている食品液体をすてる場合、食品がこぼれたり、こわれたりする。

#### [PROBLEM ADDRESSED]

A however and the above-mentioned foodstuffs are almost packaged by filling.

However, when air entered even if a little, the subject of mold springing up was also remaining acidic foodstuffs.

Moreover, as for the above-mentioned conventional lamination film, in the foodstuffs packaged object which it was made the above-mentioned solid content and a liquid content to be intermingled, and carried out filling sealing, when throwing away the foodstuffs liquid currently both packaged, foodstuffs fall.

Moreover, it breaks.

### [0005]

### [0005]

#### 【課題を解決するための手段】

本発明は上記課題を解決する抗

#### [SOLUTION OF THE INVENTION]

This invention sets that the antibacterial lamination film which solves the above-

菌積層フィルムを提供せんとするものであり、その要旨は有孔フィルムと無孔フィルムとを剥離可能に貼り合せてなり、前記無孔フィルム側に抗菌剤を含有させたことを特徴とする抗菌積層フィルムである。このことにより、前記無孔フィルムに含有された抗菌剤が有孔フィルムを通して、菌の繁殖を抑えることができる。

### 【0006】

以下添付図面に基づいて本発明を詳しく説明する。図1は本発明の抗菌積層フィルムの一例を示す正面断面図、図2は図1の使用状態を示す正面断面図である。

### 【0007】

本発明は図1及び図2に示すように有孔フィルム1と無孔フィルム2とを剥離可能に貼り合せてなり、前記無孔フィルム2側に抗菌剤3を含有させたことを特徴とする抗菌積層フィルムである。

### 【0008】

本発明において有孔フィルム1は、通水性を有する合成樹脂フィルムや不織布あるいはこれらの積層体等、種々の物が使用できるが特に合成樹脂フィルムでは、ポリエチレン、ポリプロピレン、エチレン-酢酸ビニル共重合体、アイオノマー樹脂等の単体フィルムが使用できる。また、特にヒートシール層を設けたポリエチレンテレフタレートフィルム等、種々の複合フィル

mentioned subject is provided.

The essential point forms peelably to stick a perforated film and a non-porous film.

The antimicrobial was made to contain in an above mentioning non-porous film side.

It is the antibacterial lamination film characterized by the above-mentioned.

By this, the antimicrobial contained on the above mentioning non-porous film passes through a perforated film.

The propagation of a microbe can be controlled.

### [0006]

Based on an accompanying drawing, this invention is explained in detail below.

Figure 1 is a transverse plane sectional drawing showing an example of the antibacterial lamination film of this invention. Figure 2 is a transverse plane sectional drawing showing the working condition of Figure 1.

### [0007]

A perforated film 1 and the non-porous film 2 are stuck peelably, and this invention becomes, as shown in Figure 1 and 2.

The antimicrobial 3 was made to contain in the above mentioning non-porous film 2 side.

It is the antibacterial lamination film characterized by the above-mentioned.

### [0008]

The perforated film 1 can use various things like the synthetic resin film which has water flow property, nonwoven fabrics, or these laminates, in this invention. With a synthetic resin film, simple substance films, such as polyethylene, a polypropylene, an ethylene-vinyl acetate copolymer, and an ionomer resin, can in particular be used.

Moreover, various composite films, such as the polyethylene terephthalate film which provided in particular the heat sealing layer, can also be used.

Moreover, a through-hole needs to be provided in order to provide water flow property

ムも使用できる。また、これらの合成樹脂フィルムに通水性を付与するために通孔を設ける必要がある。この通孔は、直径0.1～3 mm、通孔間の間隔0.3～30 mm程度とすれば良く、加熱針の突き刺し等により、容器に設けることができる。有孔フィルムの厚みは、5～200 μm、好ましくは、15～100 μmの範囲が良い。

#### 【0009】

この通孔は、以下に示すように充填する食品に応じて、固形分を残したまま、液体分のみを排出するのに最適な直径や通孔間の間隔が定められる。

#### 【0010】

山菜水煮の場合には、この通孔は直径1.0～3.5 mm好ましくは1.5～3.0 mm、通孔間の間隔は1.0～40 mm好ましくは1.5～30 mm程度とすれば良く、くらげの場合には、直径1.0～3.0 mm望ましくは2～2.5 mm、通孔間の間隔1.0～30 mm望ましくは1.5～20 mm程度とすれば良く、もずくの場合には、直径0.1～1.5 mm望ましくは0.6～1.2 mm、通孔間の間隔1.0～30 mm望ましくは1.5～20 mm程度とすれば良く、豆腐の場合には、直径2.0～4.0 mm望ましくは2.5～3.5 mm、通孔間の間隔1.0～30 mm望ましくは1.5～10 mm程度とすれば良く、こんにゃくの場合には、通孔は直径1.0～

on these synthetic resin films.

This through-hole should just carry out in diameter of 0.1-3 mm. What is sufficient is just to set the interval between through-holes to about 0.3-30 mm.

By the piercing of a heating needle etc., it can provide to a container.

The thickness of a perforated film is 5-200 micrometers.

Preferably, the range of 15-100 micrometers is good.

#### [0009]

The most suitable diameter for this through-hole ejecting only a part for liquid with solid content still remaining is depending on the foodstuffs filled as shown below, and the interval between through-holes are defined.

#### [0010]

What is sufficient is just to carry out this through-hole in diameter of 1.0-3.5 mm (preferably 1.5-3.0 mm) in the case of wild vegetable boiling in water. What is sufficient is just to set the interval between through-holes to 1.0-40 mm (preferably 1.5-30 mm about).

What is sufficient is just to set a diameter to 1.0-3.0 mm (desirably 2-2.5 mm) in the case of a jellyfish. What is sufficient is just to set the interval between through-holes to 1.0-30 mm (desirably about 1.5-20 mm).

What is sufficient is just to set a diameter to 0.1-1.5 mm (desirably 0.6-1.2 mm) in the case of a mozuku seaweed. What is sufficient is just to set the interval between through-holes to 1.0-30 mm (desirably about 1.5-20 mm).

What is sufficient is just to set a diameter to 2.0-4.0 mm (desirably 2.5-3.5 mm) in the case of bean curd. What is sufficient is just to set the interval between through-holes to 1.0-30 mm (desirably about 1.5-10 mm).

What is sufficient is just to carry out a through-hole in diameter of 1.0-3.0 mm (desirably 2-2.5 mm) in the case of a konjak mannan. What is sufficient is just to set the

3. 0 mm 望ましくは 2 ~ 2.5 mm、通孔間の間隔 1.0 ~ 3.0 mm 望ましくは 1.5 ~ 2.0 mm 程度とすれば良く、加熱針の突き刺し等により容易に設けることが出来る。

### [0011]

また、有孔フィルム 1 は単体だけでなく、不織布等との積層品も使用できる。この不織布はポリエチレン、ポリプロピレン、ポリエステル系の物が使用でき、目付量としては、1.0 ~ 5.0 g / m<sup>2</sup>、纖維の太さは、0.1 ~ 3 デニールのものが使用できる。不織布と有孔フィルムとの積層は接着剤を用いないで加熱圧着する方法が用いられる。

### [0012]

本発明における無孔フィルム 2 は、通水性、通気性を有さない合成樹脂フィルムでヒートシール時、ヒートシール金型に融着しないものであれば、どの様な物でも良いが、好ましくは、耐熱性がある、延伸ポリエチレンテレフタレートフィルム、延伸ポリプロピレンフィルム、延伸ポリアミドフィルムが好ましい。また、これらのフィルムに他のフィルムを積層したものでもよいが、特にポリ塩化ビニル、ポリオレフイン樹脂、ポリアミド系樹脂、ポリエステル樹脂、ポリカーボネート等からなる基材に必要に応じ、エチレンビニルアルコール共重合体、ポリ塩化ビニリデン、金属箔等を積層し、有孔フィルム 1 との積層面には、抗菌剤を練り込んだ、エ

interval between through-holes to 1.0-30 mm (desirably about 1.5-20 mm).

It can provide easily by the piercing of a heating needle etc.

### [0011]

Moreover, the perforated film 1 can use not only a simple substance but laminates, such as a nonwoven fabric.

This nonwoven fabric can use thing of polyethylene, a polypropylene, and a polyester type.

As an estimated amount, it is 10-50 g /m<sup>2</sup>. The size of fibre can use a 0.1-3-denier thing.

The method which heat-crimped the laminate of a nonwoven fabric and a perforated film without using an adhesive is used.

### [0012]

Whatever thing is sufficient as the non-porous film 2 in this invention as long as it does not fuse to a heat sealing metallic mould with the synthetic resin film which does not have water-permeable and an air permeable, at the time of heat sealing. Preferably, the drawing polyethylene terephthalate film with heat resistance, the drawing polypropylene film, and the drawing polyamide film are preferable.

Moreover, that which laminated the other film on these films may be used. In particular, on the base material which consists of a polyvinyl chloride, a polyolefin resin, a polyamide type resin, a polyester resin, a polycarbonate, etc., an ethylene vinyl alcohol copolymer, polyvinylidene chloride, a metallic foil, etc. are laminated depending on necessity. What is sufficient is just to use the composite film which kneaded the antimicrobial and which was set as polyolefin type resins, such as an ethylene vinyl acetate copolymer, a low density polyethylene, a linear low density polyethylene, a polypropylene, an ionomer, ethylene \* acrylic acid, and an ethylene ethylacrylate, for the

チレン酢酸ビニル共重合体、低密度ポリエチレン、線状低密度ポリエチレン、ポリプロピレン、アイオノマー、エチレン・アクリル酸、エチレンエチルアクリレート等のポリオレフィン系樹脂とした複合フィルムを使用すれば良い。また、抗菌剤は高価なため、共押出多層フィルムの最外層に薄く配置させることもできる。無孔フィルム2の厚みとしては、5～300μm、好ましくは、30～150μmの範囲が良い。

#### 【0013】

ここで、抗菌剤とは、種々の物が使用できるが、一般に食品包装用に使用される銀置換ゼオライト、ヒノキチオール等が好ましい。添加部数としては、0.1～10重量%程度が好ましい。

#### 【0014】

本発明の抗菌積層フィルムは有孔フィルム1と無孔フィルム2との界面で剥離可能であればよいが、一般に引張速度200mm/min、180度剥離で測定した時の接着強度を5乃至200g/15mm巾とするのが好ましい。

#### 【0015】

本発明において積層の方法は、例えば有孔フィルム1と無孔フィルム2との積層面同志を向い合わせ、少なくとも一方の表面にコロナ放電処理を施し、加熱圧着して積層する方法が採用できる。

lamination surface with the perforated film 1.

Moreover, since an antimicrobial is expensive, it can also be thinly arranged to the outermost layer of an extrusion multilayer film.

As thickness of the non-porous film 2, it is 5-300 micrometers.

Preferably, the range of 30-150 micrometers is good.

#### 【0013】

Here, thing various can be used with an antimicrobial.

However, the silver substituted zeolite generally used to foodstuffs packaging, a hinokitiol, etc. are preferable.

As an addition number, about 0.1-10 weight% is preferable.

#### 【0014】

It is said that the antibacterial lamination film of this invention is peelable at the boundary surface of a perforated film 1 and the non-porous film 2. It is preferable to make bonding strength when measuring by 200 mm/min of tensile velocity and 180 degrees peeling generally into 5 or 200 g /15 mm width.

#### 【0015】

As for this invention laminated method, for example, it is facing each other the lamination surface element of a perforated film 1 and the non-porous film 2. A corona discharge treatment is given to at least one surface.

The method heat-crimped and laminated is applicable.

## 【0016】

また、有孔フィルム1と無孔フィルム2との積層は、上記、抗菌剤含有ポリオレфин樹脂を用いて押出溶融ラミネートする方法を用いることもできる。この時、無孔フィルム2側には接着剤やアンカーコート剤を塗布し、強く接着し、有孔フィルム1側には何も塗布せず、この面から剥離可能に積層する。

## [0016]

Moreover, the laminate of a perforated film 1 and the non-porous film 2 can also use the method of carrying out an extrusion melting lamination using an above and an antimicrobial-agent-containing polyolefin resin. An adhesive and an anchor coat agent are applied to the non-porous film 2 side at this time. It adheres strongly, and nothing is applied to the perforated film 1 side, but it laminates peelably from this surface.

## 【0017】

有孔フィルム1と無孔フィルム2とを剥離可能に積層するためには使用するポリオレфин樹脂は、有孔フィルム1に使用する樹脂と相溶性の悪い樹脂が使用できる。例を挙げると、有孔フィルムにポリエチレンを使用した場合は、ポリプロピレンを、ポリプロピレンを使用した場合はポリエチレンを使用する。

## [0017]

The polyolefin resin used in order to laminate peelably a perforated film 1 and the non-porous film 2 can use the resin used to the perforated film 1 and the resin of a bad compatibility.

Polyethylene is used, when the example was given, and using polyethylene to a perforated film and a polypropylene is used a polypropylene.

## 【0018】

## [0018]

## 【実施例】

## [Example]

## 【実施例1】

有孔フィルム…東セロ化学製CMPS、OBC 50  $\mu$ 、孔径2.0 mm、孔間隔15 mm  
無孔フィルム…ポリエチレンテレフタレート(12  $\mu$ )／接着剤／エチレンビニルアルコール共重合体(20  $\mu$ )／ポリアミド(10  $\mu$ )／変性ポリオレфин(10  $\mu$ )／抗菌剤入りエチレン酢酸ビニル共重合体(4

## [Example 1]

Perforated film. CMPS made from Tohcello chemistry, OBC50 micrometers, 2.0 mm of pore sizes, the hole interval of 15 mm Non-porous film. Polyethylene terephthalate (12 micrometers)/ Adhesive / ethylene vinyl alcohol copolymer (20 micrometers)/ Polyamide (10 micrometers)/ Modified polyolefin (10 micrometers)/ The ethylene vinyl acetate copolymer including an antimicrobial (40 micrometers) 5% of vinyl acetate contents Antimicrobial. 3 weight% of silver substituted zeolites is kneaded. The corona treatment

0 μ、酢ビ含量 5 %)  
 抗菌剤…銀置換ゼオライト、3  
 重量%練り込み  
 上記有孔フィルムと無孔フィル  
 ムとを下記条件にてコロナ処理  
 ラミネートを行った。

## 【0019】

コロナ処理条件…V E T A P H  
 O N E 社製ジエネレーター  
     処理条件 有孔フ  
     イルム 2. 4 k w (高周波出  
     力)  
     無孔フ  
     イルム 2. 0 k w (     ")  
     圧着条件 ロール  
     温度 1 3 5 ° C  
     接圧 1 0 k g / c m  
     速度 1 5 m / 分  
 この様にして得られた積層フ  
 イルムの積層強度は 4 0 g / 1 5  
 mm 巾であった。この積層フ  
 イルムを使用し、ところ天と酢水  
 をポリプロピレン容器にほぼ満  
 注に入れて包装した。この状態  
 で少量空気が入った状態であつ  
 た。これを室温にて、約一ヶ月  
 放置したが、かび等の発生はな  
 かった。また、無孔フィルムを  
 はがし、容器を傾むけると酢水  
 のみが排出され、ところ天のみ  
 が容器内に残った。

## 【0020】

【比較例 1】  
 実施例 1 の無孔フィルムで抗菌  
 剤を含有しないものを使用して  
 実施例 1 と同様の条件で、上記

lamination was performed the above porous film  
 and the non-porous film on the following  
 conditions.

## [0019]

Corona treatment condition...VETAPHONE  
 company generator Process conditions  
 Perforated film 2.4kw (high frequency  
 output) Non-porous film 2.0kw (     ")  
 Press attachment conditions Roll  
 temperature 135 degrees C  
 Roll contact pressure 10kg/cm  
 Thermocompression bonding velocity 15 m/min  
 Thus the lamination strength of the obtained  
 lamination film was 40 g / 15 mm width.  
 This lamination film is used. A Tokoroten  
 (agar jelly) and vinegary water were almost put  
 and packaged in the polypropylene container at  
 filling.

It was in the condition into which small  
 amount air went in this condition.

At the room temperature, this was left for  
 about 1 month.

However, there was no generation of mold,  
 etc.  
 Moreover, an non-porous film is removed and a  
 container is leaned. Only vinegary water is  
 ejected.

Only the Tokoroten (agar jelly) remained in  
 the container.

## [0020]

## 【Comparative Example 1】

That which does not contain an antimicrobial  
 with the non-porous film of Example 1 is used.  
 On the similar conditions as Example 1, a  
 corona treatment lamination is similarly carried

と同様にコロナ処理ラミネートして積層フィルムとし、実施例1と同様にところ天を包装した。この場合も容器の内部に少量の空気が残った。これを室温にて、約一ヶ月放置したが空気が入った所に白いかびが生えた。

### 【0021】

#### 【実施例2】

有孔フィルム…2軸延伸ポリエチレンテレフタレート(12μ)／アンカーコート剤／低密度ポリエチレン(15μ)／東ゼロ化学CMPSフィルム009(30μ)  
孔径2.5mm、孔間隔15mm  
無孔フィルム…2軸延伸ポリエチレンテレフタレート(12μ)／ポリエチレン(15μ)  
ポリオレフィン樹脂…低密度ポリエチレン  
抗菌剤…銀置換ゼオライト3重量%を、前記ポリオレフィン樹脂に練込む。

### 【0022】

上記無孔フィルム2を押出ラミネーターの1次側より繰り出し、有孔フィルム1を2次側より同時に繰り出しながら、ポリオレフィン樹脂を樹脂温約300°CでTダイ型口金より有孔フィルムと無孔フィルムとの間に押し出し、圧着後巻き取った。

### 【0023】

この様にして製造された積層フ

out with it being the above-mentioned, and it makes as a lamination film.

The Tokoroten (agar jelly) was packaged like Example 1.

Also in this case, a small amount of air remained in the inside of a container.

Although this was left for about 1 month at the room temperature, white mold grew in the place containing air.

### [0021]

#### [Example 2]

Perforated film. Biaxially stretched polyethylene terephthalate (12 micrometers)/ Anchor coat agent / low density polyethylene (15 micrometers)/ Tohcello chemistry CMPS film 009 (30 micrometers)

2.5 mm of pore sizes, the hole interval of 15 mm Non-porous film. Biaxially stretched polyethylene terephthalate (12 micrometers)/ Polyethylene (15 micrometers)

Polyolefin resin... low density polyethylene

Antimicrobial. 3 weight% of silver substituted zeolites is kneaded to an above-mentioned polyolefin resin.

### [0022]

It lets out the above non-porous film 2 from extrusion laminator a primary side. A polyolefin resin is extruded by resin temperature about 300 degrees C between perforated films and non-porous films from a T die mould metal-collet, letting out the perforated film 1 simultaneously from a secondary side. It wound, after sticking by pressure.

### [0023]

Thus the bonding strength of the non-porous film of the lamination film and the polyolefin

イルムの無孔フィルムとポリオレフイン樹脂との接着強度は、  
1800 g / 15 mm巾、ポリオレフイン樹脂と有孔フィルム  
との接着強度は 50 g / 15 mm巾であった。

#### 【0024】

この積層フィルムを有孔フィルムをシール側として、ポリ塩化ビニル製容器に 190°C × 1 kg/cm<sup>2</sup> × 1.5 sec の条件で熱シールした。このシール品のポリオレフイン樹脂と有孔フィルムとの熱シール部における接着強度は、400 g / 15 mm巾で無孔フィルム / ポリオレフイン樹脂層と有孔フィルムとの手による剥離性、外観は良好であった。

#### 【0025】

この積層フィルムを用い、ポリプロピレン容器にところ天と酢水を入れ、密封シールした。ほぼ満注状態であるが若干空気が入った状態で約一ヶ月室温放置してもかび等の発生はなかった。また、無孔フィルムをはがし、容器を傾むけると、酢水のみが外に排出され、ところ天のみが容器内に残った。

#### 【0026】

#### 【比較例 2】

上記実施例 2 と同様の構成で、ポリオレフイン樹脂に抗菌剤を含まないフィルムを用いて、ボ

resin which were produced was 1800 g / 15 mm width. The bonding strength of a polyolefin resin and a perforated film was 50 g / 15 mm width.

#### [0024]

The heat sealing was carried out to the container made from a polyvinyl chloride on condition that 190 degrees C \* 1 kg/cm<sup>2</sup> \* 1.5 sec, having set this laminated film as the perforated film sealing side.

The bonding strength in the heat sealing part of the polyolefin resin of these sealing goods and a perforated film was 400 g / 15 mm width. The peelability by the hand of an non-porous film / polyolefin resin layer, and a perforated film and the appearance were favorable.

#### [0025]

A Tokoroten (agar jelly) and vinegary water are put into a polypropylene container using this lamination film.

It carried out sealing.

In the condition that air entered a little although it was in filled condition almost, Even when it carried out room temperature leaving for about 1 month, there was no generation of mold, etc.

Moreover, an non-porous film is removed and a container is leaned. Only vinegary water is ejected outside.

Only the Tokoroten (agar jelly) remained in the container.

#### [0026]

#### 【Comparative Example 2】

With the similar composition as the above-mentioned Example 2, the film which does not contain an antimicrobial in a polyolefin resin is used.

リプロピレン容器にところ天と酢水をほぼ満注に入れ、密封シールして室温で約一ヶ月放置すると、若干残った空気が入った所に白いかびが生えてきた。

【0027】

## 【実施例3】

有孔フィルムとして厚さ $50\mu$ のポリプロピレン系フィルムに、直径 $2.5\text{ mm}$ の通孔を $15\text{ mm}$ 間隔で格子状に配置したもの、無孔フィルムとして厚さ $12\mu$ のポリ塩化ビニリデンコートポリエチレンテレフタレートフィルムと厚さ $35\mu$ のポリエチレンフィルムとのドライラミネート品を準備し、有孔フィルムと無孔フィルムのポリエチレン面を貼り合せ面として、それらの間に、銀置換ゼオライト3重量%を練り込んだポリエチレン樹脂を押し出してサンドイツチラミネートを行い積層フィルムを得た。

【0028】

内容食品としてわらび、竹の子、ぜんまい、ふき、きくらげ、の水煮混合物を充填したポリプロピレン丸型容器本体（開口部内径 $90\text{ mm}$ 、高さ $50\text{ mm}$ ）の開口部に、シール温度 $190^\circ\text{C}$ 、シール圧力 $1\text{ kg/cm}^2$ で $1.5\text{ 秒}$ 、シール幅 $5\text{ mm}$ でヒートシールした。

【0029】

この状態で少量空気が入った状

A Tokoroten (agar jelly) and vinegary water are almost put into a polypropylene container at filling.

When it carries out sealing and it is left for about 1 month at a room temperature, white mold will have grown in the place containing air which remained a little.

[0027]

## [Example 3]

That which has arranged the through-hole with a diameter of  $2.5\text{ mm}$  in the shape of a lattice at intervals of  $15\text{ mm}$  on the polypropylene type film of thickness  $50\text{ micrometers}$  as a perforated film, and the dry laminate goods of the polyvinylidene chloride coat polyethylene terephthalate film of thickness  $12\text{ micrometers}$ , and the polyethylene film of thickness  $35\text{ micrometers}$  as an non-porous film are prepared. The polyethylene resin which made the polyethylene surface of a perforated film and an non-porous film the sticking joining surface, and kneaded among them 3 weight% of silver substituted zeolites is pushed out. The sandwich lamination was performed and the lamination film was obtained.

[0028]

As content foodstuffs, bracken, bamboo shoot, royal fern, butterbur and Jew's ear, boiling in water mixture was filled.

In the opening of the main body (the diameter of  $90\text{ mm}$  of opening circles, height of  $50\text{ mm}$ ) of a polypropylene circle type container, it heat sealed by the sealing width of  $5\text{ mm}$  for  $1.5\text{ seconds}$  with the sealing temperature of  $190\text{ degree C}$ , and the sealing pressure of  $1\text{ kg/cm}^2$ .

[0029]

It was in the condition into which small amount

態であった。これを室温にて、約一ヶ月放置したが、かび等の発生はなかった。図2に示すようにこの包装容器より無孔フィルムを剥離して有孔フィルムを露出させた。容器を傾けたところ、通孔から水のみを10秒間で排出できた。

### [0030]

#### 【比較例3】

実施例3の積層フィルムに換えて、抗菌剤を含有しないポリ塩化ビニリデンコートポリエチレンテレフタレート／ポリエチレン／無延伸ポリプロピレンの積層フィルム（総厚80μ）を用いて山菜水煮を充填、密封し室温で2週間放置したところ、液体分にごりが生じた。

### [0031]

#### 【実施例4】

実施例3と同様の積層フィルムを、内容食品として細切りくらげを洗い水とともに充填したポリプロピレン丸形容器本体（開口部内径90mm、高さ50mm）の開口部に、シール温度190℃、シール圧力1kg/cm<sup>2</sup>で1.5秒、シール幅5mmでヒートシールした。

### [0032]

この状態で少量空気が入った状態であった。これを室温にて、約一ヶ月放置したが、かび等の

air went in this condition.

At the room temperature, this was left for about 1 month.

However, there was no generation of mold, etc.

As shown in Figure 2, from this packaging container, the non-porous film was peeled and the perforated film was exposed.

When the container was leaned, only water has been ejected in 10 seconds from the through-hole.

### [0030]

#### [Comparative Example 3]

It changes to the lamination film of Example 3.

The lamination film (total thickness 80 micrometers) of the polyvinylidene chloride coat polyethylene terephthalate / polyethylene / unextended polypropylene which does not contain an antimicrobial is used. Wild vegetable boiling in water is filled and sealed. When it was left for 2 weeks at the room temperature, liquid part muddiness was generated.

### [0031]

#### [Example 4]

As content foodstuffs, the mince jellyfish was washed and the similar lamination film as Example 3 was filled with water. To the opening of the main body (the diameter of 90 mm of opening circles, height of 50 mm) of an above-mentioned polypropylene round device, it heat sealed by the sealing width of 5 mm for 1.5 seconds with the sealing temperature of 190 degree C, and the sealing pressure of 1 kg/cm<sup>2</sup>.

### [0032]

It was in the condition into which small amount air went in this condition.

At the room temperature, this was left for

発生はなかった。図2に示すようにこの包装容器より無孔フィルムを全部剥離して有孔フィルムを露出させた。容器を傾けたところ、通孔から、洗い水のみが10秒間で排出できた。このとき、有孔フィルムが容器からはずれる不安もなく、安定した排出が行えた。

#### 【0033】

##### 【比較例4】

抗菌剤を含有しないポリエチレンテレフタレート／ポリエチレン／シール層（総厚70μ）を用いて、実施例4と同様に細切りくらげを充填、密封し室温で2週間放置したところ、液体分にごりが生じた。

#### 【0034】

##### 【実施例5】

有孔フィルムとして実施例3の有孔フィルムに代えて、直径1.0mmの通孔を5mm間隔で格子状に配置したものを用いた積層フィルムを、内容食品1とともに洗い水とともに充填したポリプロピレン丸形容器本体2（開口部内径90mm、高さ50mm）の開口部に、シール温度190℃、シール圧力1kg/cm<sup>2</sup>で1.5秒、シール幅5mmでヒートシールした。

about 1 month.

However, there was no generation of mold, etc.

As shown in Figure 2, from this packaging container, all were peeled in the non-porous film and the perforated film was exposed.

When the container was leaned, only washing water has ejected in 10 seconds from the through-hole.

At this time, the perforated film was able to perform the ejection from the container in which there is also no shifting anxiety and it was stabilized in which.

#### [0033]

##### [Comparative Example 4]

The polyethylene terephthalate / polyethylene / sealing layer (total thickness 70 micrometers) which does not contain an antimicrobial are used.

A mince jellyfish is filled and sealed like Example 4. When it was left for 2 weeks at the room temperature, liquid part muddiness was generated.

#### [0034]

##### [Example 5]

It replaces with the perforated film of Example 3 as a perforated film.

That which has arranged the through-hole with a diameter of 1.0 mm in the shape of a lattice at intervals of 5 mm was used. It heat sealed by the sealing width of 5 mm for 1.5 seconds with the sealing temperature of 190 degree C, and the sealing pressure of 1 kg/cm<sup>2</sup> to the opening of the main body 2 (the diameter of 90 mm of opening circles, height of 50 mm) of a polypropylene round device which washed the mozuku seaweed and filled the above-mentioned lamination film with water as content foodstuffs 1.

**[0035]**

この状態で少量空気が入った状態であった。これを室温にて、約一ヶ月放置したが、かび等の発生はなかった。図2に示すようにこの包装容器より無孔フィルムを全部剥離して有孔フィルムを露出させた。容器を傾けたところ、通孔から洗い水のみ15秒間で排出できた。

**[0035]**

It was in the condition into which small amount air went in this condition.

At the room temperature, this was left for about 1 month.

However, there was no generation of mold, etc.

As shown in Figure 2, from this packaging container, all were peeled in the non-porous film and the perforated film was exposed.

When the container was leaned, it washed from the through-hole and only water has been ejected in 15 seconds.

**[0036]****[0036]****[比較例 5]**

抗菌剤を含有しないポリエチレンテレフタレート／ポリエチレン／シール層（総厚70μ）を用いて、実施例5と同様にもづくを充填、密封し室温で2週間放置したところ、もづくに異臭が生じた。

**[Comparative Example 5]**

The polyethylene terephthalate / polyethylene / sealing layer (total thickness 70 micrometers) which does not contain an antimicrobial are used.

When the mozuku seaweed was filled and sealed like Example 5 and it was left for 2 weeks at the room temperature, the nasty smell arose in the mozuku seaweed.

**[0037]****[0037]****[実施例 6]**

有孔フィルムとして実施例3の有孔フィルムに代えて、直径2.5 mmの通孔を10 mm間隔で配置したものを用いた積層フィルムを、内容食品として、さいの目豆腐を洗い水とともに充填したポリプロピレン丸形容器本体2（開口部内径90 mm、高さ50 mm）の開口部に、シール温度190℃、シール圧力1 kg/cm<sup>2</sup>で1.5秒、シール幅5 mmでヒートシールした。

**[Example 6]**

It replaces with the perforated film of Example 3 as a perforated film.

That which has arranged the through-hole with a diameter of 2.5 mm at intervals of 10 mm was used. It heat sealed by the sealing width of 5 mm for 1.5 seconds with the sealing temperature of 190 degree C, and the sealing pressure of 1 kg/cm<sup>2</sup> to the opening of the main body 2 (the diameter of 90 mm of opening circles, height of 50 mm) of a polypropylene round device which washed the diced bean curd in the case and filled the above-mentioned lamination film with water as content foodstuffs.

## 【0038】

この状態で少量空気が入った状態であった。これを室温にて、約一ヶ月放置したが、かび等の発生はなかった。図2に示すようにこの包装容器より無孔フィルムを全部剥離して有孔フィルムを露出させた。容器を傾けたところ、通孔から洗い水のみ15秒間で排出できた。

## [0038]

It was in the condition into which small amount air went in this condition.

At the room temperature, this was left for about 1 month.

However, there was no generation of mold, etc.

As shown in Figure 2, from this packaging container, all were peeled in the non-porous film and the perforated film was exposed.

When the container was leaned, it washed from the through-hole and only water has been ejected in 15 seconds.

## 【0039】

## [0039]

## 【比較例6】

抗菌剤を含有しないポリエチレンテレフタレート／ポリエチレン／シール層（総厚70μ）を用いて、実施例6と同様にさいの目豆腐を充填、密封し室温で2週間放置したところ、さいの目豆腐に異臭が生じた。

## [Comparative Example 6]

The polyethylene terephthalate / polyethylene / sealing layer (total thickness 70 micrometers) which does not contain an antimicrobial are used.

When the diced bean curd in the case was filled and sealed like Example 6 and it was left for 2 weeks at the room temperature, the nasty smell arose on the diced bean curd in the case.

## 【0040】

## [0040]

## 【実施例7】

実施例3と同じ、直径2.5mmの通孔を15mm間隔で配置したものを用いた積層フィルムを、内容食品として、さしみこんにゃくを洗い水とともに充填したポリプロピレン角形容器本体（縦75mm、横140mm、高さ25mm）の開口部に、シール温度190°C、シール圧力1kg/cm<sup>2</sup>で1.5秒、シール幅5mmでヒートシールした。

## [Example 7]

The same as Example 3, that which has arranged the through-hole with a diameter of 2.5 mm at intervals of 15 mm was used. It heat sealed by the sealing width of 5 mm for 1.5 seconds with the sealing temperature of 190 degree C, and the sealing pressure of 1 kg/cm<sup>2</sup> to the opening of the main body (75 longitudinal mm, side of 140 mm, height of 25 mm) of a polypropylene rectangular device which washed the sliced konjak mannan and filled the above-mentioned lamination film with water as content foodstuffs.

## 【0041】

## [0041]

この状態で少量空気が入った状態であった。これを室温にて、約一ヶ月放置したが、かび等の発生はなかった。図2に示すようにこの包装容器より無孔フィルムを全部剥離して有孔フィルムを露出させた。容器を傾けたところ、通孔から洗い水のみ10秒間で排出できた。

【0042】

**【比較例7】**

抗菌剤を含有しないポリ塩化ビニリデンコートポリエチレンテレフタレート／ポリエチレン／無延伸ポリプロピレンの積層フィルム（総厚80μ）を用いて山菜水煮を充填、密封し室温で2週間放置したところ、液体分にごりが生じた。

【0043】

**【発明の効果】**

以上説明したように、本発明は有孔フィルムと無孔フィルムとを剥離可能に貼り合せてなり、前記無孔フィルム側に抗菌剤を含有させたことを特徴とする抗菌積層フィルムであるので、含水率の高い食品を包装した場合に、食品の腐敗を防ぐことができ、しかも固体分と液体分とが混在した食品を包装する場合には必要に応じて無孔フィルムを有孔フィルムから剥離して、液体分のみを排出できるものである。

It was in the condition into which small amount air went in this condition.

At the room temperature, this was left for about 1 month.

However, there was no generation of mold, etc.

As shown in Figure 2, from this packaging container, all were peeled in the non-porous film and the perforated film was exposed.

When the container was leaned, it washed from the through-hole and only water has been ejected in 10 seconds.

[0042]

**[Comparative Example 7]**

The lamination film (total thickness 80 micrometers) of the polyvinylidene chloride coat polyethylene terephthalate / polyethylene / unextended polypropylene which does not contain an antimicrobial is used. Wild vegetable boiling in water is filled and sealed. When it was left for 2 weeks at the room temperature, liquid part muddiness was generated.

[0043]

**[EFFECT OF THE INVENTION]**

As explained above, this invention forms peelably to stick a perforated film and a non-porous film.

The antimicrobial was made to contain in an above mentioning non-porous film side.

Since it is the antibacterial lamination film characterized by the above-mentioned, the decay of foodstuffs can be prevented when the high foodstuffs of a moisture content are packaged.

And in packaging the foodstuffs with which it was intermingled by the amount of solid content and liquid, it peels an non-porous film from a perforated film depending on necessity.

Only a part for a liquid can be ejected.

## 【図面の簡単な説明】

## [BRIEF EXPLANATION OF DRAWINGS]

## 【図 1】

本発明の抗菌積層フィルムの一  
例を示す正面断面図

## [FIGURE 1]

Transverse plane sectional drawing showing an example of the antibacterial lamination film of this invention

## 【図 2】

図 1 の使用状態を示す正面断面  
図

## [FIGURE 2]

Transverse plane sectional drawing showing the working condition of Figure 1

## 【符号の説明】

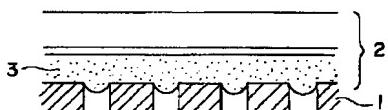
- 1 有孔フィルム
- 2 無孔フィルム
- 3 抗菌剤

## [EXPLANATION OF DRAWING]

- 1 Perforated film
- 2 Non-porous film
- 3 Antimicrobial

## 【図 1】

## [FIGURE 1]



## 【図 2】

## [FIGURE 2]

